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Disclosure

➢ Presenters/authors have no actual or potential conflict of interest in relation to this presentation.

➢ Presenters/authors of this presentation are all employees of Purdue University and have not received commercial support or sponsorship for this presentation.
Learner Objectives

➢ Describe the Quality Improvement Framework that guided the IPE project.

➢ Identify the stages of IPE project development, implementation, evaluation, and student learning outcomes.

➢ Discuss opportunities for implementing similar IPE projects in schools/colleges of nursing
Why Quality Improvement and IPE?

Multiple Reports from IOM (NAM) beginning in 1999

Future of Nursing Report (2010)

The Triple Aim
Nursing Education Drivers

➢ Healthcare crisis in US requires significant reductions in cost and improvements in quality.
➢ Nurses have the potential to make a grassroots impact in transforming healthcare.
➢ Nursing skills are expanding to include quality improvement (QI), interprofessional teamwork, and systems thinking.
AACN Essential II:

Basic Organizational and Systems Leadership for Quality Care and Patient Safety:

Knowledge and skills in leadership, quality improvement, and patient safety are necessary to provide high quality health care.
We need a different kind of nurse!

**LEADER, ADVOCATE, AND CHANGE AGENT**
LEAN Quality Improvement

A methodology to approach system problems

DMAIC

- Define
- Measure
- Analyze
- Improve
- Control
Freshman Year

➢ Nurse’s role in the QI process
➢ Patient safety

Sophomore Year

➢ Complete basic QI projects in clinical or public health settings.

Junior Year

➢ Apply basic systems and QI tools
➢ Value Stream mapping, fishbone diagram, and 5-Whys
Senior Year

QI fully integrated in Nursing Leadership course in a service-learning framework

- leadership
- team building
- presentation skills
- patient advocacy
- system focus thinking

Projects opportunities are identified by practice partners and other academic units
Examples of Senior Projects

➢ Designing patient portals
➢ Reducing alarm fatigue
➢ Decreasing wait time from ER to unit admission
➢ Integration of behavioral health in a Nurse Managed Clinic
➢ Increasing supply chain efficiency and cost savings in a university student health center
➢ Improving the patient transition process in an ACO

Some projects contributed to an institution’s Magnet Journey
Interprofessional /International

Patient Safety Pilot Project
IPE Project Overview

Problem: One of the leading causes of nurse back injuries is moving the patient from bed to chair

Industry Support: Stryker Company approached Purdue Engineering Technology with sponsorship support

Initial Collaboration

Purdue Engineering Technology

Fontys University of Applied Sciences

BUT
Engineering Technology faculty recognized the need for nursing student involvement in the conceptual design, development, fabrication and testing of a patient safety deliverable

**BECUSE**

Nurses are the end users, and understand the needs and limitations of the healthcare system.
Project Process and Development

*Interprofessional Project Team*

Four Nursing Purdue Students
Four Purdue Engineering Technology students
Three Fontys University Engineering Students

**Team Charter:** Roles & Responsibilities
- Team meeting schedule
- Communication methods
- Conflict resolution methods

**Project Timeline:** Two semesters
First Semester Project Development

**DEFINE**
Problem defined by project sponsor

**MEASURE**
Project team researched current best practices and current technology utilized for patient transfers

**ANALYZE**
Comprehensive analysis of current patient transfer practice and devices

**CONTROL**
Prototype modification based on project scope of work, and sponsor feedback

**IMPROVE**
Two project prototypes were designed and presented to sponsor

Purdue Nursing
Second Semester Project Development

**Plan:** Student design and development based on the requirements to satisfy the customer (patient), the end-users (nurses) and meet all safety criteria that healthcare systems must meet.

**Do:** The selected prototype is fabricated. The second design using a modified Shepard's hock and pneumatic actuator was selected after it was determined that this design met patient and nursing best practice needs.

**Check:** IRB approval received for prototype testing. Strengths and weaknesses of device are identified.

**Act:** Presentation of new device is delivered to Stryker cooperation in the Netherlands in May 2016
Final Product Design

- Design used a modified Shepard’s hook with a pneumatic actuator.

- Base is attached to the bed allowing the device to be set up and stored with minimal steps.

- Patient must be able to support 25% of their weight.

- Maximum weight of 500 pounds.
Lessons Learned

"I had no idea how complex the healthcare system. The size of the patient's room, the need for easy storage and nursing access are key metrics in developing successful and efficient healthcare technology. Thanks to the nursing students we always kept the patient and system the focus of our project deliverable."

"I have a whole new view of nurses, they not only know how to take care of patients, they understand how the system works.......our nursing team members are leaders!!"
Lessons Learned

“We learned a whole new vocabulary that we can apply in our nursing practice, terms such as “Factor of Safety”, and “Overall Engineering Process”.

“This project provided me a valuable interprofessional learning experience. We overcome many obstacles and barriers that taught me the importance of perseverance and teamwork”

“I took away a new found appreciation for the work of our engineering technology partners and their rigorous improvement process”
Questions and Comments
Contact us

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